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Portable Interface

The portable interface according to the invention for a stationary unit, which is provided for the data exchange with mobile data media via a contact zone on the mobile data medium, has approximately the same form as the mobile data medium and is provided at the same site with a contacting region, the interface additionally being provided at a margin region accessible from the outside with a further contact zone, which is electrically connected to the contacting region.

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Specification

The invention relates to a portable or removable interface according to the preamble of claim 1.

Stationary stations, such as for example telephones, automated teller machines, etc., which serve for reading and processing of, for example, chip cards or the like portable data media, are becoming increasingly more complex and therefore also require more complicated servicing work.

Service for such a station until now was performed by a service technician, who must open the particular station in order to obtain the desired service information by means of appropriate interfaces or measuring instruments. Based on the obtained information, subsequently corresponding service activities are carried out, such as for example reprogramming, program-controlled adjustments, in particular of electromechanical devices of the stationary station or an intervention or repair of the apparatus.

However, in many cases measures are involved, in which no electromechanical intervention would have to be carried out on the apparatus, such as for example data acquisition, reprogramming, program-controlled adjustments, etc. But even in these cases until now the stationary station had to be opened in order to complete the desired service setting.

The present invention therefore aims to specify a portable interface, which permits carrying out certain service settings on a stationary unit even without laborious opening of the stationary station.

This aim is achieved through a portable or removable interface with the characteristics of claim 1.

Further developments are subject matter of the dependent claims.

The advantage of the present invention is that, for example, commercially available chip card read and write devices or similar stations can be serviced

from the outside, for example for the purpose of servicing. The previously necessary opening of the chip card read or write apparatus is no longer necessary due to the invention.

The contact zone, which is accessible from outside, can advantageously be implemented as a plug or a jack and thus the entire configuration can be connected in simple manner via an interface cable for example with a laptop or the like, which subsequently can carry out the data exchange for the servicing.

In a further embodiment the invention can comprise additionally an extended region which, after insertion of the portable interface into the chip card read or write apparatus, projects outwardly and is provided with an operating unit. Such a configuration is sufficient for simple service purposes and, in a further embodiment, can additionally be provided with a display.

In the following the invention will be described in further detail in conjunction with four figures. In the drawing depict:

Fig. 1 a top view onto a first embodiment according to the invention in the form of a chip card with contact region,

Fig. 2 a partially perspective view of a second embodiment according to the invention in the form of a chip card,

Fig. 3 a top view of a further third embodiment according to the invention in the form of a chip card with an additional integrated operating element and a display, and

Fig. 4 a top view onto a further embodiment according to the invention with a contact-free chip card.

Figure 1 depicts as the mobile data medium for example a chip card 1 which comprises at, for example, a site standardized according to ISO standard, a contacting region 2. This can be, for example, a conventional chip card, such as is used *inter alia* in telephony or as health insurance card, etc. However, in this

card 1 there is not provided an integrated circuit beneath the contacting region 2. However, a microchip can be provided on the chip card. At an outer margin region, here the edge of the chip card 1, remote from the contact region 2, the card is provided with a further contact zone 3 which has the same number of contacts as the contacting region 2. The contact zone 3 in the depicted example is implemented as a plug. These contacts are connected with the contacts of the contacting region 2 via lines a, b, c, d, e, f, g, h (shown in dashed lines).

These lines can extend in the interior of the card 1 or the card 1 can itself be implemented as a printed circuit board, such that the contacts of the plug and those of the contacting region are, for example, soldered on.

Figure 2 shows a perspective view of a variant, in which the further contact zone is implemented as a jack 4. It is understood that, instead of a plug or a jack, also a ribbon cable or the like, equipped with corresponding end or connection contacts, serve as a further contacting region. A cable carried to the outside could, if necessary, in this case also be carried out from one of the lateral regions.

After insertion of the chip card 1 according to figure 1 or 2 into the chip card read or write apparatus the contacting region 3, 4 is accessible to a service technician from the outside. Via an appropriately implemented interface cable or the already integrated ribbon cable, he can subsequently connect the interface implemented as a chip card, for example to a laptop or a service computer. All required electronic interfaces, which are necessary for the data transmission or for the data exchange, respectively, are located in the service computer or the laptop, respectively. Via the service computer the desired technical program measure can be initiated in simple manner under computer control. The chip card 1 according to the invention serves consequently for the electrical connection of the chip card read or write apparatus with the service computer, and the chip card read or write apparatus does not need to be opened.

If simple and always repetitive measures are to be carried out, for which conventionally no separate service computer or laptop is necessary, in a further implementation according to Fig. 3 the entire servicing work can also be carried out only from the chip card 1. The chip card 1 comprises for this purpose an extended region 5, which, after insertion of the card into the stationary station, projects outwardly and is consequently accessible from the outside.

This additional region 5 can, for example, be implemented with an operating unit 6, here for example in the form of a keypad. In addition, a display 7 can also be provided. In the interior of card 1 can be located in conventional manner, for example beneath the contacting region 2, a special integrated circuit, for example a microcontroller can be disposed with all necessary interfaces and corresponding service programs, which, via the corresponding interfaces, is connected with the contacting region 2 of the keypad 6, the display 7 and the plug 3.

If, for example, only certain service data are to be tested, this can be carried out by the specially implemented microcontroller and the service program controlling it. For this purpose it is only necessary to insert such a service card into the apparatus to be checked, thus into the stationary station, and by pressing an appropriate key 6, a desired service program is started. The corresponding service program can each time be programmed individually via the same interface, for example in a service department. Should a display of data be required, which informs the operator technician about the condition and state of the apparatus, this can take place for example via a suitable display at the station to be checked. If the station does not have such a display, the chip card itself can also be provided with such a display 7.

In all of the above examples a chip card was utilized as the mobile data medium. It is understood that the portable interface according to the invention can also be implemented in the form of a key or the like. Of significance is only

that the interface has approximately the same form as an otherwise compatible mobile data medium.

In connection with the figures 1 to 3 a card interface has been described, in which the portable site in the form of a chip card has a contact region to be contacted. Instead of this contact region to be contacted, the portable interface can for example also be a so-called "contact-free" chip card. The chip card only needs to be appropriately modified, to the extent that for example, via suitable inductive or capacitive coupling elements, the data transmission to and/or from the data medium read or data medium write device are coupled on.

In figure 4 such a "contact-free" chip card is schematically shown as a further embodiment example of the invention. The chip card comprises a microcomputer chip 8, which in this case is not provided with a contact region, which for the information transmission with the data medium read device would have to be in contact with contacting prongs. Rather the chip card 1 comprises a suitable coil in order to establish the data transmission to the data medium read device. Form and size of this coil 9 determine the reading distance. Chip cards which are readable and writable free of contact are known as such. According to the present invention the chip card 1 however at one of the margin regions accessible from the outside is additionally provided with a contact zone 3, which is electrically connected with the contacting region of the microcomputer chip 8. For this purpose electrical lines a, b, c, d, e, f, g and h are connected with the microcomputer chip 8 such that they are electrically conducting. This solution has the decisive advantage that via the further contact zone 3, which in the present embodiment example is disposed on the front side on chip card 1, access is given to the data stored within the data medium read device or data medium write device. To position this data medium read device or data medium write device it is only necessary to insert the chip card 1 into this device. Via the outer contact zone region 3 of the chip card an external personal computer can be

connected, which can carry out necessary parametrization of the data medium read device or data medium write device, into which the chip card is inserted. In the present embodiment example data transmission between chip card and data medium read device or data medium write device is carried out inductively.

Patent Claims

1. Portable interface for a stationary unit, in which, for the data exchange with mobile data media, a contact zone is provided on the mobile data medium, characterized in that that portable interface (1) has approximately the same form as the mobile data medium and at the same site is provided with a data transmission region (2), the interface (1) being additionally provided at one of the margin regions, accessible from the outside, with a further contact zone (3, 4), which is electrically connected (a, b, c, d, e, f, g, h) with the contacting region.
2. Portable interface as claimed in claim 1, characterized in that the portable interface (1) comprises an extended region (5), which, after the interface (1) has been inserted into the stationary unit, is accessible from the outside and which comprises a further contact zone (3; 4).
3. Portable interface as claimed in claim 2, characterized in that the extended region (5) is provided with an operating unit (6).
4. Portable interface as claimed in claim 2 or 3, characterized in that the interface (1) on its extended region (5) comprises a display device (7).

5. Portable interface as claimed in one of the preceding claims, characterized in that the further contact zone is a plug (3) or a jack (4), whose contacts are connected with the particular contacts of the contact zone.

6. Portable interface as claimed in one of the preceding claims, characterized in that the further contact zone (3; 4) is a cable connection, in particular a ribbon cable, whose one end contacts are accessible from the outside and whose other end contacts are connected with the data transmission region (2).

7. Portable interface as claimed in one of the preceding claims, characterized in that the card (1) is implemented as a circuit board, whose conductors serve for the connection of the contact regions.

8. Portable interface as claimed in one of the preceding claims, characterized in that the interface (1) comprises a microprocessor for controlling the servicing tasks for the stationary operating unit, which is connected with the contact zone (2) for transmitting and for receiving control signals and which receives commands via the operating unit (6) and optionally outputs them via the display (7).

9. Portable interface as claimed in one of the preceding claims, characterized in that the interface (1) comprises a contact-free data transmission device (9), which is provided instead of the contacting region (2) and serves for the data transmission with a data medium read device or data medium write device, respectively.

10. Portable interface as claimed in claim 9, characterized in that the contact-free data transmission device comprises a coil (9).

2 sheets of drawing enclosed
